A CASE OF DECOMPRESSION FOR CEREBRAL THROMBOSIS[1]

By Dr. J. J. Thomas and Dr. F. B. Lund

of Boston

Remarks by Dr Thomas

The patient whose case we wish to report to you to-night was a young woman who entered the Boston City Hospital on the service of Dr. Mason, of the Gynecological Department, last summer on August 30, and whom I was asked to see in consultation the next morning.

She was a young married woman, Mrs. A., 33 years of age, who was delivered on August 28, after a normal pregnancy and a normal delivery of her sixth child. The day before she was delivered, and this was at full term, she had vomited the whole day, but had no chill, no swelling of the face or extremities, and no convulsion. The urine on the day she was admitted to the hospital, August 30, was acid, had a specific gravity of 1.014, and showed a very slight trace of albumin but no sugar, and the sediment showed a very few granular casts and a few epithelial cells. When she came into the hospital the pulse was 82 and the temperature 98.6°. Soon after her entrance a little twitching of the left side of the face was noticed. That night she had a left-sided convulsion and another one early the next morning. The morning of the 31st there was a great deal of twitching of the left side of the face and it was that morning that she was seen by me. While I was present there was a nearly constant twitching of the muscles of the left side of the face, more especially of those about the mouth, and finally a convulsion. In this the twitching began first in the muscles about the left side of the mouth, the eyes were first turned to the right and later to the left, the twitching soon spread to the left arm, and then the left leg, and then became general. In a few minutes, not more than three or four from the time the twitching began, she was again conscious and answered questions, saying that she had no pain, and protruded the tongue when asked.

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[1] Reported at the meeting on November 19, 1909, of the Boston Society of Psychiatry and Neurology.

On examination the tongue deviated distinctly to the left when protruded, and there was distinct paresis of the whole of the left side of the body including the face, with relaxation of the muscles, the left thigh being broader than the right as she lay in bed on the back. The knee jerks were nearly equal, the left being perhaps slightly the greater, there was no ankle clonus and no Babinski's sign, both plantar reflexes being absent. The left triceps reflex was distinctly greater than the right. The right pupil was opaque from former disease so that the relative size of the pupils could not be observed, but the left one reacted to light.

That afternoon she had four convulsions, all confined to or beginning in the left side of the face, and the left hemiplegia became complete, and she had become completely unconscious so that she could not be roused, while there were rales in both lungs and the temperature had risen. The operation for decompression which had been advised by me in case the condition became critical was decided upon, and was done that evening by Dr. Lund, and was done without ether as the patient was so deeply unconscious.

After the operation there were two general convulsions and several slight ones involving the face alone, that night and the next day. The next morning she was conscious and rational. I saw her again on Sept. 2d and at that time there was left hemiplegia with no voluntary motion, but no Babinski's sign, and no definite increase of the reflexes. She was conscious and answered questions rationally and promptly. After the first day following the operation there were no more convulsions, and recovery was uninterrupted, except that the temperature remained slightly elevated for a time, probably due to foul lochia. On Sept. 11th the left side of the face was still paretic and the strength of the left leg had improved so it was fairly good. There was marked protrusion of the brain through the opening in the skull, which persisted for some time. She was finally discharged from the hospital with no evidences of a hemiplegia, nor was there any distinct disturbance of sensation or of the stereognostic sense.

Through the kindness of Dr. Rowen we have been able to learn of the further progress of the case. After the woman returned home she was weak, but gained slowly for some weeks when she had a severe convulsion. At first uremia was suspected, but she improved again, and after a time this was repeated, so that it seems probable that the destroyed area of the brain acts to produce convulsions that are epileptic in nature, an organic epilepsy.

It seems to me that this operation of cerebral decompression for vascular lesions of the brain is one the suitability of which in various cases is still uncertain, as we do not know as yet the indications and contraindications for it. At present my own feeling in regard to it is that in view of the fact that so many of these cases recover without operation, it should be reserved for those in which we feel reasonably certain that the outcome will be fatal without interference, and that in these cases we may be able to prevent the fatal outcome is I think shown by such a case as this one reported by Dr. Lund and myself, and from the cases reported by Dr. Cushing, provided that the actual destruction of brain tissue is not too great. Perhaps one reason for the greater fatality in operations of decompression in cases of cerebral hemorrhage than in those of thrombosis, judging from recent work that has been done upon the etiology of shock may be that in the cases of hemorrhage there is apt to be more extensive destruction of nerve fibers.

REMARKS RY DR. F. B. LUND

We are always aware that in the treatment of chronic disease of the brain—by which I mean chiefly tumors—we often meet with discouragement and disappointment. The case in which we are able to remove a tumor is a rarity and the case in which no disability is left behind after removal is a still greater rarity.

Cerebral decompression in tumor has its distinct indications and is well worth doing, but at the most it can usually promise only temporary relief from pain and blindness. After it is performed we have to watch our patient go from bad to worse, losing one faculty after another until death mercifully ends the scene.

On the other hand, a very recent development of cerebral surgery has been that of decompression for acute conditions. If in a condition, either pathological or traumatic, attended by temporary edema of the brain, we can perform decompression, it may be our good fortune to save our patient's life and to save him in a condition in which he may be a useful member of society. Cerebral decompression in acute conditions seems to me at present the most hopeful department of surgery of the brain.

The case which Dr. Thomas has reported is the case in question. He has given you the symptoms and the history of the case. He saw her on the morning of August 31 and as she grew steadily worse during the day, I was asked to see her in the evening. When I saw her she showed complete flaccid paralysis of the left arm and leg, with constant spasm of the left side of the face and neck, and turning of the head to the left. She was completely unconscious, with stertorous respiration, and rapidly growing worse. I immediately proceeded to operate without an anesthetic and during the rather extensive procedure no sign of feeling was manifested by the patient. A large semicircular incision was made on the right temporal region, exposing the greater part of the squamous portion of the temporal bone, extending upward on to the parietal bone, forward as far as the coronal suture and backward as far as the posterior border of the ear. As the patient's condition was so desperate I did not stop to split the temporal muscle, but scraped it back with the skin flap. By removal of a trephine button and the use of rongeur forceps an area of bone nearly as large as the palm of my hand was removed. Upon opening the dura in a line following the bone incision, the pia was found to be edematous, the convolutions showing slight, if any, yellowish discoloration and the brain bulging through the opening to a marked extent. The pulse at the beginning and close of the operation was about 130. After removing this area of bone the dura was left open and the scalp stitched carefully back into place, a portion of the temporal muscle also being brought back and attached to the occipito-frontalis aponeurosis.

The next morning the patient could answer questions and, as Dr. Thomas has told you, she had only two convulsions after the operation. In the course of about eight days her paralysis had disappeared. She was up and about in a little over two weeks and is now at home doing her housework. During the first few days after the operation the hernial bulging was more marked, then it began to gradually subside, and I am told that there is very little left of it at present.

The history and symptoms leave little doubt that the case was one of cerebral embolism and I have no doubt that all who saw the case with me felt that without operation the result would have been fatal. The recovery of this patient is certainly one of the most satisfactory surgical experiences that I have ever had, and I feel that whatever credit there is in the case is due to Dr. Thomas on account of his diagnostic skill and alert recognition of the surgical possibilities of the case.

Only a short time before operating upon this case I was called into the country to see a patient suffering from cerebral hemorrhage and moribund. He was sixty years of age and his physician requested me to do a decompression and if possible incise the brain and allow the blood clot which was causing the trouble to escape. He stated that he had attended Dr. Cushing's clinic and had seen this operation performed and felt that it gave the patient his only chance of life. Judging from the man's condition which was worse than that of the patient in the case just reported, I felt that he would probably die during the operation, and also that if he should survive he would probably suffer during the remainder of his life from hemiplegia on account of the destruction of motor fibers in the internal capsule. I therefore presented the matter to the family in such a light that they did not care to have the operation done, nor could I urge its performance.

Since then I have had the pleasure of talking over with Dr. Cushing the general subject of trephining in acute conditions—thrombosis, embolism and hemorrhage. He tells me that he has several times decompressed in cerebral hemorrhage, incising the cortex, whereupon the clot is exuded by intracerebral pressure. The operation is a difficult one. There is great congestion and the patients upon whom he has done the operation have died of pneumonia. He does not feel that the operation at present should be attempted except by those who have given the subject special attention and who are especially skilful.

Dr. Cushing states in a recent article that he has performed decompression in cerebral embolism five times successfully and has also successfully operated by decompression for the cerebral edema of Bright's disease. While therefore the advisability of operating in cerebral hemorrhage with the idea of removing the clot may still be said to be sub judice it seems to me there can be little doubt of the propriety in skilled hands of cerebral decompression in embolism or other acute conditions producing cerebral edema. Dr. Cushing's well-known work on "Subtemporal Decompression in Basal Fractures" also should extend our operative indications in those conditions. I cannot but feel that the case here presented points toward a considerable extension of the field for cerebral decompression, and that in these acute conditions are to be found perhaps the most favorable indications for cerebral surgery. I do not mean that I am discouraged as to operating for brain tumor. Operation at the present time is our only resource in that condition, and an occasional brilliant success will justify many discouragements and defeats. I believe that this work should be persisted in, but that, as stated above, decompression in acute conditions causing cerebral edema will perhaps give us a larger percentage of favorable results than the same operation in tumors of the brain.